



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/744,159	01/22/2001	Gerhard Strohm	3547-6	3943

7590

05/07/2002

Nixon & Vanderhye
8th Floor
1100 North Glebe Road
Arlington, VA 22201-4714

EXAMINER

OCAMPO, MARIANNE S

ART UNIT

PAPER NUMBER

1723

DATE MAILED: 05/07/2002

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/744,159

Applicant(s)

STROHM ET AL.

Examiner

Marianne S. Ocampo

Art Unit

1723

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 October 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4 and 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." The following references had been listed in the specification: US Patents 4,347,208; 2,088,199; 3,666,107; 5,607,581 and EP Patents 028,531B1; 327,394A2 and 233,999.

Therefore, unless the above references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1 – 14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a). Claim 1 does not use any of the conventional transitional phrases (i.e. “comprising”, “consisting”, consisting essentially of”, etc.) following a preamble, but uses the transitional phrase “*characterized in that* the draining layers ...*have*”. Is this transitional phrase being considered as an open or closed transitional phrase? In other words, does it have a similar meaning as the open transitional phrase “comprising of” or that of the closed transitional phrase “consisting of”. For examination purposes, the examiner has considered this mentioned non-conventional transitional phrase as an open ended transitional phrase (similar to that of “comprising of”). Claim 1 is also unclear as to the meaning of the limitation “draining layers on the transition which is the other one at the time to the filtrate/unfiltered material space”, found in lines 5 – 6. What draining layers is considered “the other one” and what does the phrase “on the transition” mean? Furthermore, it is unclear what the limitation “the sealing elements and/or the flow elements have means for mutual connection” means. Does it mean that the sealing element of one draining layer is mutually connected (or has a structural means for connecting) to other sealing elements of other or adjacent draining layer, or that the sealing element and the flow element of each draining layer being mutually connected or have means for being (mutually) connected to one another, or both?

b). In claim 4, what does the limitation “adsorptively acting filter layers” mean structurally? Are the filter layers formed of adsorbent or adsorptive material, or only functions like adsorbents/adsorptive materials?

c). In claim 5, what does the limitation “differently adsorptively acting materials are worked into the filter layers” mean structurally? Are filter layers formed of different adsorptive

materials or that different types of adsorptive materials are mixed with/laminated with/coating the filter layers?

d). Claim 10 recites the limitation "massive frame" in line 2. The term "massive" in claim 10 is a relative term which renders the claim indefinite. The term "massive" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. Does "massive" mean just a bit larger (i.e. in size) than the rest of the filter module, or mean a certain range of (length, width or height) dimensions? What is this range of dimensions, or in other words, what size is considered "massive"?

e). Claim 11 recites the limitation "the draining layer has a plastic non-woven" in line 2. There is insufficient antecedent basis for this limitation in the claim. Which draining layers has such plastic non-woven, and what type of plastic non-woven is it (i.e. mesh, mold, or a part thereof is plastic and non-woven)? It is unclear if a typographical error has made here, and that the word "has" should have been written as "is".

f). Claim 12 recites the limitation "the draining layer" in line 1. There is insufficient antecedent basis for this limitation in the claim.

g). Claim 13 recites the limitation "these connection means" in lines 1 – 2. Is "these connection means" the same structural element which has been referred to previously in the base claim as "means for mutual connection" or not?

h). Claims 2 – 3, 6 – 9 and 14 are dependent claims of claim 1, and therefore they also suffer the same defects since they depend therefrom.

Claim Objections

4. Claims 1, 11 and 13 are objected to because of the following informalities:

a). in claim 1, the phrase "layers of filter" should be deleted from line 1, before the phrase "layers of deep bed filter material", because it is unnecessary and redundant.

b). in claim 11, the word "has" should be changed to "is" because it is grammatically incorrect.

c). in claim 13, the phrase "connection means" should be changed to "means for mutual connection" to avoid confusion and provide consistency between claims.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1, 3 - 4, 6 – 12 and 14 are rejected under 35 U.S.C. 102(b) as being anticipated by Naruo et al. (US 4,871,456).

7. With respect to claim 1, Naruo et al. disclose a filter module with layers of filter layers (2) of deep bed (organic and porous) filter material between which there are spacer elements of draining layers (14, 15), the draining layers (14, 15) and filter layers (2) being stacked on one another without gaps (as in fig. 8) and the draining layers (14, 15) being sealed on alternate sides to the filtrate and unfiltered material spaces by means of sealing elements (16 and portions of inner rim 3), and characterized in that the draining layers (14, 15) have flow elements (10, 3) and that the sealing elements and/or flow elements have means for mutual connection (annular coupling rings, not shown), as in figs. 6 - 8 and in cols. 5 - 10.

8. Concerning claim 3, Naruo et al. disclose at least two filter layers (2) with the same degree of separation (since they are formed of the same material) lie on top of one another, as in fig. 8 and cols. 6 - 7.

9. With regards to claim 4, Naruo et al. further disclose the filter layers (2) being adsorptively acting (defined to be any fibrous material, including those formed of thermoplastic fibers which are formed into porous films (2) which are capable of adsorption or absorbing impurities such as particles and microbes from a fluid flowing therethrough) filter layers, as in col. 7.

10. Regarding claim 6, Naruo et al. also disclose the filter layers (2) having sealing elements (16) which point towards the filtrate space (chamber between films, 17, 14), as in figs. 7 - 8.

11. With respect to claim 7, Naruo et al. further disclose the sealing elements (16, 3) are moldings (i.e. formed of plastic (molded or die cut) material), as in cols. 6 - 7.

12. Concerning claim 8, Naruo et al. also disclose several sealing elements (16) being joined to one another leakproof by annular coupling members (not shown), as in col. 6, lines 31 - 41.

13. With regards to claim 9, Naruo et al. disclose the sealing elements (16) having structures (L-shaped indentations adjacent peripheral portions 12) which fit into a filter layer (2) adjacent thereto at the time, as in fig. 8.

14. Regarding claim 10, Naruo et al. further disclose the flow elements (3, 4) having a massive frame (massive or bigger than at least the sealing elements 16) with holes or grooves (10, 5) which lie in the plane of the draining layer (14), as in fig. 8.

15. Concerning claim 11, Naruo et al. also disclose the draining layers (14) being formed of a plastic (i.e. polyester or polypropylene) and non-woven (unwoven) material, as in col. 7, lines 25 - 34.

16. With respect to claim 12, Naruo et al. disclose the draining layer (14) being made in one piece with the sealing element (16) and the flow element (3), as in fig. 5 and col. 6, lines 65 – 66.

17. Concerning claim 14, Naruo et al. disclose the filter layers (2) and draining layers (14, 15) being planar (having a horizontally flat or even surface), as in figs. 5 and 8.

Claim Rejections - 35 USC § 103

18. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

19. Claims 2 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naruo et al. (456) in view of Naruo et al. (US 4,876,007).

20. Regarding claim 2, Naruo et al. (456) fail to disclose at least two filter layers with different degrees of separation lie on top of one another. Naruo et al. teach a filter module similar to the one disclosed by Naruo et al. (456) wherein the filter module has at least two filter layers (2 and 21) which have different degrees of separation, as in figs. 5 and 7. The examiner here as considered that the netty support layer (21) performs at least a minimal filtration (i.e. capable of trapping at least some of the particles or microbes to be filtered therethrough), which then lead to longer life span and increased effective filtration area of the filtration unit (2, 21), as in col. 5, lines 6 – 24. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter module of Naruo et al., by adding the embodiment taught by Naruo et al. (007), in order to provide an improved filter module which provides an increased effective filtration area and more stable filtering elements which lead to longer life span of the filter module (col. 5).

21. Concerning claim 7, Naruo et al. (007) also teach the filter module including sealing elements (6, 20) which are moldings (22, formed as one part by extrusion molding process with the other parts such as the support spokes 23 and outer flange 20), as in fig. 3 and in col.4, lines 62 – 67. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the sealing elements of the filter module of Naruo et al., in lieu of the embodiment taught

by Naruo et al., in order to provide an alternative design and eliminate numerous parts to be bonded/assembled together to form the filter module, thereby providing a filter module which is more compact and easy to assemble (cols. 4 – 5).

22. Claims 5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naruo et al. (456) in view of Raifman (US 5,112,503).

23. With respect to claim 5, Naruo et al. fail to disclose differently adsorptively acting materials being worked into the filter layers. Raifman teaches a filter module similar to that of Naruo et al. (456), the filter module including layers of deep bed filter material (12) stacked together on top of one another, and the layers (12) have different adsorptively acting materials (i.e. such as porous diatomaceous earth) being worked into (coating) the filter layers (12), as in col. 3, lines 37 – 61. Here, the examiner has considered “different adsorptively acting material” to be an adsorbent or adsorptive material (such as diatomaceous earth or any porous material inert to the fluid to be filtered thereby) materially different from the filter material forming the filter layers (12). It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter layers of the filter module of Naruo et al., in lieu of the filter layers taught by Raifman, in order to provide alternative filter material, as well as provide filtering elements which are more effective, thereby providing greater surface area for filtration (col. 3, lines 57 – 61.).

24. Concerning claim 13, Naruo et al. fails to disclose the means for mutual connection between the sealing elements and/or the flow elements being clips and catch projections. Raifman further teach the filter module having several sealing elements and/or flow elements (defined by circular plates 14) which are adjoined together thereby a means of mutual connection (40) which comprised of clips and catch projections (threaded bosses 57 and ferrules 59) which interlock with each other, as in cols. 4 – 5 and in figs. 3 – 5. It is considered obvious to one of ordinary skill in the art at the time of the invention to modify the filter module of Naruo et al., by adding the embodiment taught by Raifman, in order to provide an improved means of mutually connecting (attaching and sealing) several filter units which each comprised of filter layers, sealing elements and flow elements, in a leakproof and easy manner (col. 4, lines 58 – 68 and col. 5, lines 1 - 59.).

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent. 1,138,251 (Schaefer), 4,793,928 (Tsukamoto et al.), 2,631,732 (Vocelka) and 3,241,678 (Wrotnowski).

26. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Marianne S. Ocampo whose telephone number is (703) 305-

Art Unit: 1723

1039. The examiner can normally be reached on Mondays to Fridays from 8:00 A.M. to 4:30 P.M..

27. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (703) 308-0457. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

28. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

M.S.O.
May 3, 2002

M. Savage
MATTHEW O. SAVAGE
PRIMARY EXAMINER